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SUMMARY OF TRADE AND TARIFF INFORMATION

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Prepared in Terms of the Tariff Schedules of the United States

FILM, SHEET, AND PROFILE FORMS OF PLASTICS AND RUBBER

TSUS items 771.20-771.55

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FOREWORD

Each Summary of Trade and Tariff Information is part of a series published by the United States International Trade Commission to provide information on conditions of competition between domestic and foreign products. This report, generally covering the period 1975 through 1979, represents one of many being published in the current series of summaries.

This series provides comprehensive coverage of products uses, the domestic industry, U.S. consumption, production, and trade, and the domestic and international markets in each commodity area. The summaries are cast in terms of the eight schedules of the Tariff Schedules of the United States (TSUS).

The current series will consist of approximately 600 individual reports. The Commission will issue updates statistical tables and industry status reports as appropriate for individual summaries. The overall program will run several years, ultimately covering all items of the TSUS.

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Executive Summary

This summary covers film, sheet, and other profile shapes made from plastics--principally polyethylene, polyvinyl chloride, and polypropylene--and from natural and synthetic rubber. The other profile shapes include rods, tubing, filament, and slabs. Almost all these products are formed by extruding a heat-softened material through a slit or other designed opening which gives them their dimensional shape. Almost all are sold or transferred to "downstream" manufacturers which convert them to consumer items such as bags and other types of packaging, floor tile, windows and shapes, automobile parts, outdoor signs, drain pipe, weather stripping, and many others.

The domestic industry comprises more than 400 firms, the largest 20 of which account for the bulk of U.S. production. U.S. consumption of these products rose from about $2.8 billion in 1975 to an estimated $7.5 billion in 1979, while volume rose from about 5.3 billion pounds to 7.4 billion pounds. This rapid growth should continue at least for a number of years as new and improved end uses continue to be developed and as plastics continue to displace such traditional materials as paper, metal foil, and fabrics.

There has been a continued movement of production facilities to foreign locations, especially the less-developed countries, as the cost of transportation is a high percentage of aggregate costs of many of the large-volume commodity films. From the viewpoint of the foreign country it is often preferable to import the basic plastics materials and use the labor of that country to manufacture and market these products. Both equipment and production know-how are available worldwide. In most countries, but not in the United States, import duties on plastics materials are much lower than those on film and other products made from the plastics.

Imports, which have been increasing in recent years, amounted to 338 million pounds, valued at $308 million in 1979, or 4 percent of the value of domestic consumption. U.S. exports rose steadily from about $300 million in 1975 to an estimated $614 million in 1979; the volume of the increase was from about 284 million pounds to about 520 million pounds. This positive balance of trade was achieved despite the fact that foreign import duties are mostly in the range of 8 to 18 percent ad valorem, whereas most U.S. imports encounter duties of only 4 to 6 percent. The concessions made in the recent Multilateral Trade Negotiations will not change the relative advantage held by foreign countries. The past positive U.S. balance of trade may be partly attributed to the alleged economic benefit resulting from U.S. Government controls on oil and gas prices. Both oil and natural gas provide the feedstocks from which plastics and synthetic rubber are made. As controls are removed, prices of U.S. oil and gas will rise toward world levels, whereupon some of the alleged U.S. economic advantage would be lost, with uncertain effects on future imports and exports.

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Description and Uses

Commodity	TSUS Item No.
Film, strips, sheets, plates, slabs, blocks, filaments, rods, seamless tubing, and other profile shapes, all the foregoing wholly or almost wholly of rubber or plastics:	
Of cellulosic plastics materials:	
Of cellulose acetate	771.20
Of vulcanized fiber	771.25
Other:	
Film, strips, and sheet:	
Not over 0.003 inch in thickness	771.30
Over 0.003 inch in thickness	771.31
Other	771.35
Not of cellulosic plastics materials:	
Flexible film, strips, and sheets:	
Made in imitation patent leather	771.40
Other:	
Of materials other than polyester, polyvinyl chloride, polyethylene, polypropylene, over 0.006 inch in thickness, and not in rolls	771.41
Other	771.43
Other:	
Of acrylic resin	771.45
Of casein	771.50
Other	771.55

Note.--For the statutory description, see excerpt from the Tariff Schedules of the United States Annotated (1981) in app. A. A concordance of the TSUS items included in this summary with related categories in other production, export, and import nomenclatures is found in app. B.

This summary covers rubber and plastics products of film, sheet, rods, and other profile shapes. Because film and sheet account for more than 90 percent of total consumption of all the products discussed herein, this report relates principally to film and sheet, most of which is made from low-density polyethylene (LDPE), polypropylene (PP), and polyvinyl chloride (PVC); therefore, this summary emphasizes the plastics industry portion and applications of LDPE, PVC, and PP film and sheet. All these products are intended to be further processed into useful consumer and industrial articles. Excluded are certain plastic and rubber-coated fabrics--"supported film"--which are classified as textile products, and certain laminates with paper and metal foil. Also excluded are laminates of rubber and plastics of any type.

The rigid plastics covered in this summary can be further advanced or processed into finished articles by a number of methods, including, but not limited to, drilling, tapping, cutting, and heat forming. The flexible materials considered herein can be used in a number of ways and can be cut

heat sealed, and attached to each other or to nonplastic materials by adhesives or, in some instances, sewn together.

Although paper had its origin in antiquity, its recent history shows that for many uses it has been replaced by plastic film. This more recent development dates back to 1924 when the first cellophane was produced in this country, followed by film of LDPE, PVC, and PP following World War II. Films may be used alone as "free films" which may be coated with any of numerous lacquers, inks, waxes, or thermoplastic resins; or as laminates obtained by combining a film with one or more films, papers, or foils utilizing adhesives or heat and pressure. Films are available in thicknesses up to the maximum of 0.010 inch (or 10 mils, above which thickness it is defined as sheet); in widths to more than 40 feet; from materials having no moisture-vapor barrier properties to those nearly equaling glass or metal in this respect; from materials which are able to "breathe" to some which have almost zero oxygen transmission; from opaque to nearly transparent film materials in almost any color of the rainbow; from materials having flammable to fire-resistant or fire-retardant properties; and with various degrees of flexibility, electrical responsiveness, chemical resistivity, thermal response, and printability; or in short, with materials possessing almost any desired characteristic. 1/

There are many factors to be considered in deciding what materials to use for the film to perform specific functions. The diversity of properties offered by, or which can be built into films is almost endless. There exist numerous currently available film-forming materials which either possess certain desired qualities, which are capable of utilizing additives for special qualities, or which can be processed and later treated, coated, or combined into laminations to produce a variety of products. All these film choices are achieved by the proper selection of those rubber elastomers which can be processed into film, the thermoplastic resins, or regenerated cellulose.

A profile extrusion is defined as an item having a profile with a uniform cross section. The manufacture of a profile extrusion involves forcing a heat-softened plastic through a permanent die in the shape of the desired profile. This procedure allows for the manufacture of products having intricate cross-sectional designs as well as having the design of the outline remain continuous. 2/ PVC, polyethylene (PE), the acrylics, and polycarbonate are the principal materials for extruded profile forms. These profiles may take the form of long strips, filaments, rods, seamless tubing, rectangular or cubical solids, trapezoidal rods, and other various intricate shapes and sizes. Profiles are generally used in construction and/or in decorative applications, such as chair rails, door trimmings, window trimmings, window parts, and so forth.

Rubber film and sheeting represent only a small segment of this industry. There is now very little rubber film being made in the United States. Rubber sheet, also, has been replaced by plastics materials in many applications. Uses of rubber film and sheet include water-repellent applications, in which

1/ Encyclopedia of Chemical Technology--vol. 9 (2d ed.), Kirk-Othmer, (John Wiley & Sons, New York, 1966), pp. 220-228.

2/ Plastics for the Construction Industry Through 1985, Delphi Marketing Service, Inc., p. 100.

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they have been replaced mostly by PVC, and applications in roofing systems. Other applications include ditch linings, pool and pond linings, bed coverings, film for radiation protection from X-ray machines, linings for tanks and pipes utilizing the chemical resistivity properties of certain synthetic rubbers, and specialty applications. Neoprene, ethylene-propylene terpolymer (EPDM) and butyl rubber are the most widely used rubbers in the rubber film and sheeting industry.

The major application of plastics film is in flexible packaging. Major resins in flexible packaging of both food and nonfood applications are PE (especially LDPE), PVC, and PP. Plastic film is primarily an intermediate product which is fabricated into bags and sacks, wraps, tapes, coatings, coextruded wraps and bags, curtains, placemats, swimming pool liners and covers, pool linings, ditch linings, and other finished products made from the film. Film is used to coat textile farbics, nylon materials, paper, foil, wood, and steel products such as desk tops and tables.

Plastic sheet or sheeting (10 mils, or 0.01 inch, or thicker) encompasses a variety of resins and applications. PVC, cellulosics, polystyrene (PS), high-density polyethylene (HDPE), and acrylics are the plastics most widely used. Examples of applications are in indoor paneling, glazing for windows, outdoor siding, sign covers and signs, bags, liners, shower curtains, tablecloths, unsupported seat covers, floor tiles (unsupported), plastic runners, auto mats, auto tops, and so forth.

Plastic netting may be classified under the flexible or nonflexible film provisions in the TSUS, depending upon dimensional and shape requisites. The netting may be in the form of rectangular shapes or in rolls of tubed shapes longer than 18 inches in length.

Film, sheet, netting, and other profile shapes pf plastics are generally extruded. Calendering (between metal rolls) and casting of film and sheet are also still employed. Calendering and casting represent more labor-intensive processes than does extruding, but they offer other properties desired in the finished product.

Extruded film and sheet account for 95 to 99 percent of all film and sheet. Extrusion is that process in which plastic pellets are fed into a funnel-shaped hopper and dropped into the channel of the extruded screw which rotates (in a tubular barrel) and forces the pellets forward. As the plastic charge progresses forward in the extruder channel or barrel, it becomes heated, melted, thoroughly mixed, and compressed within the screw channels. The melted plastic is then pushed through a slit opening or die. In profile extrusion the die opening determines the desired cross section of the profile. In blown-film extrusion, air is blown up through a circular die at the same time the plastic material comes out and balloons it into a long, cylindrical tube which comes back together as it is wound onto an overhead shaft. In flat-film extrusion, the plastic flows downward through the die. In calendering, the plastics material is forced between pairs of heated metal rolls of which the setting of the last pair determines the thickness of the sheet or film.

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The basic methods of producing film, sheet, and other profile shapes have changed little over the years. 1/ However, improvements in the machinery and in the process come at frequent intervals. Processors and fabricators must maintain continued investment in technology because increased productivity is the key to higher profits and helps keep cost down and competition keen.

Another important economic aspect of the plastics industry is the fate of scrap that is generated during adjustments in the manufacturing process. Recycling is preferred. At best, the scrap can be reground, blended with virgin plastics, and recycled in the same plant for the same application. Scrap is used for low-quality products also, e.g., trash bags.

Extrusion technology in 1973-78 advanced remarkedly; productivity for extruded product lines was up 25 percent; and prices of extrusion equipment rose about 40 percent. This cost increase has prevented a larger reduction in conversion costs.

Customs Treatment

U.S. customs treatment

The following table shows the rates of duty which applied to imports of plastics and rubber film, sheet, and other profile forms from those countries having most-favored-nation (MFN) status (col. 1) 2/ prior to the completion of the recent Multilaterial Trade Negotiations (MTN) in 1979; the column 1 rates of duty which became effective on July 1, 1980; the column 1 rates of duty effective January 1, 1981; the future negotiated column 1 rates of duty; the rates of duty which apply to imports from certain countries under Communist domination or control (col. 2), and a statement as to the eligibility for duty-free treatment under the Generalized System of Preferences (GSP) 3/ of the articles in the table, and the rates of duty currently applicable to imports from the least developed developing countries.

1/ Rubber film and sheet can be extruded and calendered much like plastic film and sheet. For more complete details on the financial, technical, and engineering aspects of extrusion of plastics parts, see Practices of Plastics Customs Extruders, available from Profiles Extruders Division of the Society of the Plastics Industry (SPI).

2/ The rates of duty in rate of duty column numbered 1 are Most-Favored-Nation (MFN) rates, and are applicable to imported products from all countries except those Communist countries and areas enumerated in general headnote 3(f) of the TSUS. However, such rates would not apply to products of developing countries which are granted preferential tariff treatment under the GSP or under the "LDDC" rate of duty column.

3/ The Generalized System of Preferences, under title V of the Trade Act of 1974, as amended, provides duty-free treatment of specified eligible articles imported directly from designated beneficiary developing countries. GSP, implemented by Executive Order No. 11888 of Nov. 24, 1975, applies to merchandise imported on or after Jan. 1, 1976, and is expected to remain in effect until Jan. 4, 1985.

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Film, sheet, and profile forms of plastics and rubber: U.S. rates of duty, previous, present, and negotiated, by TSUS items 1/ 2/

TSUS item no.	Description	Col. 1 rate of duty before MTN reduction 3/	Col. 1 rate of duty after MTN stage one reduction 4/	Present col. 1 rate of duty 5/	Negotiated col. 1 rate of duty 6/	Col. 2 rate of duty 7/	GSP eligibility 8/	LDDC 9/
	Film, strips, sheets, plates, slabs, blocks, filaments, seamless tubing, and other profile shapes, all the foregoing wholly or rubber or plastics:							
	Of cellulosic plastics materials:							
771.20	Of cellulose acetate	6¢ per lb	3.3% ad val.	3.2% ad val.	2.9% ad val.	30.5% ad val.	Yes	2.9% ad val.
771.25	Of vulcanized fiber	4% ad val.	3.9% ad val.	3.8% ad val.	3.1% ad val.	30% ad val.	Yes	3.9% ad val.
	Other:							
	Films, strips, and sheets:							
771.30	Not over 0.003 inch in thickness.	11% ad val.	10.4% ad val.	9.8% ad val.	6.2% ad val.	45% ad val.	Yes	6.2% ad val.
771.31	Over 0.003 inch in thickness.	8¢ per lb	4.9% ad val.	4.8% ad val.	3.7% ad val.	28.5% ad val.	Yes	3.7% ad val.
771.35	Other	10¢ per lb	4.1% ad val.	4.1% ad val.	4.1% ad val.	18% ad val.	Yes	
	Not of cellulose plastics or materials:							
	Film, strips, and sheets, all the foregoing which are flexible:							
771.40	Made in imitation of patent leather.	4% ad val.	3.9%	3.8% ad val.	3.1% ad val.	25% ad val.	Yes	3.1% ad val.

See footnotes at end of table.

Film, sheet, and profile forms of plastics and rubber: U.S. rates of duty, previous present, and negotiated, by TSUS items 1/ 2/

TSUS item No.	Description	Col. a rate of duty before MTN reduction 3/	Col. 1 rate of duty after MTN stage one reduction 4/	Present col. 1 rate of duty 5/	Negotiated col. 1 rate of duty 6/	Col. 2 rate of duty 7/	GSP eligibility 8/	LDDC 9/
	Other:							
10/ 771.41	Of materials other than polyester, polyvinyl chloride, polyethylene, over 0.006 inch in thickness, and not in rolls.	6% ad val.	6% ad val.	6% ad val.	11/	25% ad val.	Yes	
12/ 771.42	Other	6% ad val.				25% ad val.	Yes	
10/ 771.43	Other	6% ad val.	5.8% ad val.	5.6% ad val.	4.2% ad val.	25% ad val.	Yes	4.2% ad val.
	Other:							
771.45	Of acrylic resin	8.5¢ per lb	8.5¢ per lb	8.5¢ per lb	11/	50¢ per lb	Yes 13/ 14/	
771.50	Of casein	5¢ per lb	3.3% ad val.	3.2% ad val.	2.7% ad val.	17% ad val. 15/	Yes	2.7% ad val.
771.55	Other	10% ad val.	9.5% ad val.	9% ad val.	5.8% ad val.	35% ad val.	Yes	5.8% ad val.

1/ Relevant pages of the 1981 TSUS regarding these items are provided in app. A.

2/ Use provisions generally take precedence over materials of composition.

3/ Effective before June 30, 1980.

4/ Rate of duty effective July 1, 1980.

5/ Effective Jan. 1, 1981.

6/ Rate negotiated under the Multilateral Trade Negotiations (Tokyo round) to be achieved through 8 annual staged reductions to reach the final duty listed here.

7/ The rates of duty in rate of duty column numbered 2 apply to imported products from those Communist countries and areas enumerated in general headnote 3(f) of the TSUS.

8/ Generalized System of Preferences provided for in general headnote 3(c) of the TSUS pursuant to title V of the Trade Act of 1974, as amended (88 Stat. 2066, 19 U.S.C. 2461 et. seq.).

9/ The rates of duty in rate if duty column "LDDC" are preferential rates (reflecting the full U.S. MTN concession rate for a particular item without staging) and are applicable to products of the least developed developing countries designated in general headnote 3(d) of the TSUS which are not granted duty-free treatment under the GSP. If no rate of duty is provided in the "LDDC" column for a particular item, the rated of duty provided in column numbered 1 applies.

10/ New 1980 TSUS item derived from part of 1979 TSUS item 771.42.

11/ No scheduled reduction presently in effect for this TSUS item.

12/ TSUS item through December 1979.

13/ Taiwan was not entitled to GSP, duty-free treatment during 1978.

14/ Executive Order 12204 amends the GSP such that it removes Taiwan as eligible for GSP treatment for item 771.45 and maintains GSP-eligibility status for all other beneficiary developing countries for all other TSUS items. This was effective Mar. 30, 1980 (45 F.R. 20740, Mar. 23, 1980).

15/ Col.2 rate of duty was changed on Jan. 1, 1980, from 25¢ per lb to this ad valorem equivalent.

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The criteria for inclusion of rubber or plastics products into the categories covered in this summary are given in the headnotes to schedule 7, part 12, subpart B, of the Tariff Schedules of the United States Annotated (TSUSA). 1/ These articles are provided for under items 771.20-771.55 of the Tariff Schedules of the United States (TSUS), which cover plastics in their primary forms; i.e., in forms from which other articles may be made. Subpart B headnote 1 limits the provisions for sheet and film to dimensions of greater than 15 by 18 inches, cut into rectangular shapes, and the provisions for filaments, rods, tubing, and profile shapes of lengths of over 15 inches.

Certain so-called supported rubber and plastics films are classified as coated fabrics in items 359.10 through 359.60 of the TSUS. 2/

Laminates of rubber and plastics are classified in TSUS items 770.05 and 770.07. However, articles in chief value of paper are covered in schedule 2, part 4, subparts B, C, and D. TSUS items 644.01-.06 cover metal foil and leaf, backed or mounted with paper or equivalent backing, when the chief value is of metal.

TSUS items 854.20 amd 864.20 describe cellulosic plastics materials imported for use in artificial kidney machines or apparatus by a hospital or by a patient pursuant to prescriptio of a physician, and samples solely for use in taking orders for merchandise, respectively. The column 1 rate of the former is free and the latter, free under bond (with no statistical data furnished). It is possible that plastic film and sheet may enter the United States under these two provisions, but little is known at present about imports entering under these TSUS provisions.

For the purposes of this summary, film is classifiable by thicknesses under 10 mils or 0.010 inch. 3/ 4/ Sheeting is defined as 10 mils or more. 4/ 5/ Flexible film or sheeting describes film and sheet which is capable of being bent, turned, or twisted without being broken and with or without returning of itself to its former shape. There is no requirement that

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1/ See app. A for TSUS explanation and statistical breakouts.

2/ See headnote 2 to Part 4C of schedule 3 of the TSUS for a definition of coated or filled fabric.

3/ Film: A flat section which is very thin in relation to its length and breadth. Some authorities contend that "film" has a nominal thickness of under 10 mils (0.010 inch); others contend that film is most often employed in applications requiring thicknesses under 6 mils (0.006 inch). There is lack of agreement as to exactly where the line of demarcation between film and sheet should fall. Polyvinyl chloride sheet and film from the Republic of China, USITC Publication 879, April 1978, investigation No. AA1921-178, p. A-50.

4/ Whittington's Dictionary of Plastics, 1968, p. 105.

5/ Sheet: Applies to thicknesses of 10 mils in gage and over, or to thicknesses of 6 mils in gage and over, depending on which authority is considered. Polyvinyl chloride sheet and film From the Republic of China, USITC Publication 897, april 1978, investigation No. AA1921-178, p. A-50.

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a "flexible" article must be capable of being bent, bowed, or twisted in every direction. 1/

In 1978, the Commission conducted an antidumping investigation on PVC film and sheet from the Republic of China (Taiwan) and determined that the U.S. PVC sheet and film industry is being, or is likely to be, injured by the importation of PVC sheet and film from the Repubic of China. It was determined that this film and sheet from the Republic of China, with certain exceptions, was being, or was likely to be, sold in the United States at less than fair value. A preliminary list of companies to be maintained or removed from antidumping duty scrutiny is scheduled to be issued by the U.S. Department of Commerce, Office of Compliance, sometine around February 1981.

Foreign customs treatment

Tariff trends.--With the exception of the United states and Canada, most countries use the Customs Cooperation Council Nomenclature (CCCN), formerly known as the Brussels Tariff Nomenclature, as the basis for their tariff classifications. Rates of duty in the European Communities, Canada, and Japan for the articles covered by this summary are given in appendix A. The following tabulation shows the present rates of duty and the rates negotiated under the MTN for the most important articles of this summary--sheet and film of PE, PVC, and PP:

Market	Description of commodity and foreign tariff item No.	Present rate of duty 1/	Negotiated rate of duty 2/
Canada	Polyethylene, PVC, and polypropylene film, sheet, tubing, rods, and other profile forms (93902-81 (PVC), 93902-82 (PE), 93902-84 (PP)).	17.0% ad val.	13.5% ad val.
EEC	Polyethylene, PVC, and polypropylene tubing, rods, and other profile forms (39.02C).	17.7% ad val.	12.5% ad val.
Japan	Polyethylene film, sheet, and other forms (39.026(1)).	10.8% ad val.	7.2% ad val.
	Polypropylene fil, sheet, and other forms (30.02(6)).	10.8% ad val.	7.2% ad val.
	PVC film, sheet, tubing, rods, and other profile forms (39.026(4)B).	8% ad val.	5.8% ad val.

1/ Rates currently applicable to imports from the United States.
2/ Final rates negotiated under the MTN.

1/ United States Customs Court decision, C.D. 3885.

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A comparison of the rates of duty shown in the above tabulation shows that the negotiated rates of duty for imports into Canada and the EEC are several times larger than the U.S. rates for plastic articles described in this summary. The Japanese tariff rates are lower than those assessed by the EEC and Canada, but for the most part higher than the U.S. rates. For rubber articles herein described, the EEC and Canadian tariff rates are more comparable to U.S. rates and sometimes lower. Japanese tariff rates for flexible rubber products are presently equal to U.S. rates, but for other rubber products U.S. rates are higher.

Nontariff barriers for U.S. exports.--U.S. exporters tend to find it difficult to export film and sheet and other basic shapes into other countries. A significant factor, besides generally higher tariff rates, is the cost of transportation and freight. This cost has risen substantially and will continue to rise as oil prices go up. U.S. exporters of film and sheet are therefore exporting the specialty films and sheet rather than the PP, LDPE, and PVC films and sheet. In this manner the ratio of cost of transportation and freight to the value of the film or sheet shipped is more advantageous.

In some countries the protection from imports is so severe that imports, except in temporary emergency situations and for product grades or types that cannot or are not being made in those countries, are not allowed to enter even under very high duty rates. Foreign governments use these tactics when they are trying to build up an industry in their respective countries. The plastics film and sheet industry provides a basis in many countries to make final marketable products, e.g., clothing stuffed in bags and vegetables packaged in bags, by utilizing the relatively inexpensive and automated film and sheet processing equipment and then taking this film and sheet and using it in the more labor-intensive field of packaging. Many of these countries are the beneficiary developing countries which make products which enter the United States duty-free under the GSP.

The U.S. Industry

The value of shipments of the products in this summary was $7.8 billion in 1979. 1/ Industry sources estimated that there are about 450 plastics film and sheet processing companies operating more than 1200 establishments. These companies are principally located in the mid-Atlantic and Central States. For LDPE, the most important plastic in this summary, there were more than 320 companies manufacturing LDPE film in 1978, of these about 160 produced 5 million pounds or more of film per year, accounting for an estimated 90 percent of the total. These 160 companies produced film at approximately 272 plant locations and averaged about 28 million pounds of film annually; however, half of these companies produce 10 million pounds or less per year. LDPE film and sheet markets have reached maturity and are projected to grow at an annual rate of sbout 4 percent through 1985. The number of employees in the entire plastic industry is estimated by the Society of the Plastics Industry to be about 460,000, with 106,000 in extruded film and sheet alone.

1/ Estimate of the SPI and the Commission staff.

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In 1976 the salaries and wages for those employees working in plants manufacturing miscellaneous plastics products, including the profile forms (SIC 3079), were about $13,000 per person. Estimated salary and wages for the average worker in the film and sheet portion of the plastics industry were about $20,000 in 1980, including benefits. 1/ According to industry sources, the industry is characterized as raw-material intensive; since raw materials account for about 70 to 75 percent of the total cost of the product, the capital investment in equipment accounts for around 20 percent, and labor 5 to 10 percent.

Financial information on the plastics processing industry

Such information on the plastics processing industry, of which film, sheet, and other profile forms are a larger and representative segment, is compiled and reported by SPI. In 1979, after-tax profits of the companies in the industry ranged from 2 to 7 percent of sales. Expressed as return on shareholders' equity, the pretax profitability in the industry varied from 1.1 to 51.3 percent for companies with sales less than $5 million, with the median being 25.3 percent. For companies with sales $5 million and more, the percent was between 6.8 an 36.1 with the average falling at about 22 percent. 2/ However, 1978 and 1979 were very profitable years for plastics processors. In 1980 they were affected by the recession, although less severely than other industries, as this is a fast-growing industry.

Rubber

The rubber segment of this summary accounts for only about 1 percent of the products discussed herein, and for less than 2 percent of the value of shipments of all types of fabricated products of rubber (SIC 3069). Growth of rubber profile forms is expected to continue at a rate of almost 9 percent per year through 1985.

Prices and price setting

Industry contacts agreed that for the large-volume film and sheet resin (e.g., LDPE, PP, and PVC), the price of the basic product should run about two and one-half times the cost of the resin plus the cost of any fillers, extenders, or processing aids. Prices of these products may fluctuate several times a year. Pricing of these large-volume products is very competitive. Price increases are generally across-the-board and occasional spot reductions may occur to reduce inventories, to increase market share, to gain potential customers, or to maintain present sales.

1/ Derived from industry sources. Film and sheet machine operators operate very technical equipment and even though most of it is automated, highly skilled personnel are required.

2/ Facts and Figures of the Plastic Industry, SPI, 1980, pp. 18-23.

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For specialty film and sheet which only certain companies produce (e.g., nylon, coextruded film) and which are used in specific market/product areas (e.g., boil-in-bags made of nylon for distributors of convenience foods), prices may be higher owing to research, product development, equipment, and marketing cost. Price setting for these types of films is relatively simple since there are fewer suppliers of the film/sheet required for the special applications.

Marketing

The producers of the basic plastics materials sell part of their output to producers of film and profile shapes, while in many instances also captively consuming their plastics materials to produce the same products. Similarly, film and sheet producers, commonly called converters, not only sell their output to the makers of such products as plastic bags and upholstery, but also in some instances compete with their customers by making and selling the same products themselves. The great bulk of film and sheet is sold directly within a 250-mile radius of the manufacturinf establishment. Specialty films and profile shapes such as chair rails, drain pipe, window sashes, and baseboard are sold over a much broader area. Methods of distribution--direct selling versus selling through middlemen--are varied and no one method predominates.

The U.S. Market

Domestic market profile

Characteristics of consumers.--The products covered by this summary are converted to industrial and consumer goods, examples of which are the following:

Film uses:
- Food packaging: bread bags, confectionery wraps, meat wraps, blister packs, and household wraps.
- Nonfood applications: garment bags, industrial liners, shrink-film pallet overwrap, trash and leaf bags, tapes, coatings for textiles and desk tops, windows shapes, curtains, fertilizer bags, diaper linings, agricultural mulch film, and roofing.

Sheet uses:
- Placemats, swimming pool liners and covers, pond and ditch linings, indoor paneling, glazing for windows, outdoor siding, outdoor signs and sign covers, shower curtains, seat covers, vinyl floor tiles, auto floor mats, auto tops, thin wall containers, contour maps, margarine tubs, tablecloths, trays, wall coverings, blister packages for hardware and razor blades, microfiche holders, and photographic film.

Profile forms:
- Gutters, drain pipe, window sashes, baseboard, chair railing, weather stripping, and seamless hose and tubing.

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These uses suggest the great variety of consumers of film, sheet, and profile forms. Their number is in the tens of thousands if not hundreds of thousands companies which range from giant manufacturing corporations to grocery store chains to owners of a few bag-making machines or thermoforming units. 1/ Packaging firms are by far the largest single group. Although some film is purchased by the general public in the form of household wraps (e.g., Saran Wrap), this type of product has first undergone processing by an industrial converter which, starting with the large industrial rolled-up film, unwinds, slits, rewinds on a small cardboard cylinder, and packages it for retail sale.

The industrial consumers are located in the areas of largest polulation, primarily in the Eastern and North Central States at the preent time, but they are moving to the South and Southwest with the general shift in U.S. population. As noted previously, most film and sheet is not transported more than 250 miles from the manufacturing site.

Demand and competitive factors.--The film and sheet market is intensely competitive, not only because of the large number of producers, but because of their variety and the rapid pace of improvements. The purchaser of film not only can choose among 5 to 10 varieties based on the basic plastic (PE, PVC, PP, cellulosic) from which the film is made, but for certain desired properties one can buy 2-ply or 3-ply combinations as well as laminated cloth or foil. For packaging meat, one selects a film which "breathes,: so the incoming oxygen will maintain the red color of the meat. For certain food products, one chooses a variety of film which does not allow the passage of water vapor. Where strength is required, one turns to "oriented" polypropylene or polyester film. For packaging frozen turkeys, a loose bag is employed which subsequently shrinks tightly to the product. These special properties demand a premium price which may mot be deemed worthwhile by the potential customer.

In addition to the competition between the many varieties of plastic film and sheet, all of them are continually competing with the traditional materials such as the many forms of paper (including waxed paper, glassine, paperboard, and heavy kraft), fabric, and metal foil. Competition with traditional products is especially keen for the other profile forms such as paneling, house siding, baseboard, and chair railing.

The industrial consumer generally buys the least expensive product which will fulfill that company's requirements. In addition to the price of the film and sheet per square foot, the purchaser, for example, a bag producer, also considers productivity factors such as ease of printing and sealing the bag.

1/ Thermoforming involves forcing a heat-softening thermoplastic sheet against a temperature-controlled mold by means of pressure, which is generally provided by drawing a vacuum between the sheet and the mold. The sheet thus takes on the contours of the mold. Thin-wall containers, blister packs, skin packs, prefab blisters, and card stretch-film packs are all produced by thermoforming, a process which dates from World War II.

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Competition with imports has been a minor problem overall as evidenced by the fact that imports have never captured as much as 5 percent of the domestic market. Importers of film and sheet do, however, benefit from the fact that U.S. duties are mostly in the 4 to 6 percent ad valorem range, which is lower than the duties for the basic plastics themselves. A foreign plastics manufacture which wants to export to the United States may therefore find it more economical to convert his product to film and ship it overseas in that form.

A large fraction of the imports are specialty and high-technology products which are more expensive than the commodity films. However, in a number of specialty applications such as films for convenience packaging, which is so well suited to U.S. retailing in supermarkets and the like, the foreign manufacturer or exporter may be at a disadvantage because some of these applications have not been fully adopted in his own country. In general, U.S. plastics producers agree that the domestic products are of equal or better quality than the imports.

U.S. consumption

As shown in table 1 of app. C, U.S. consumption of plastics and rubber film, sheet, rods, tubes, and other profile shapes increased steadily, from an estimated $2.8 billion in 1975 to $7.5 billion in 1979, with volume rising from 5.3 to 7.4 billion pounds. During this period consumption of polyethylene film and sheet remained the most important, and is estimated to account for more than 45 percent of the toal volume of articles covered in this summary.

In terms of quantity, the ratio of imports to consumption of plastics and rubber film, strips, sheet, rods, tubes, and other profile shapes rose steadily from 1.8 percent in 1975 to 4.5 percent in 1979. The ratio of imports to consumption for 1980 is estimated to have dropped to 4 percent. PVC is the major import; its penetration peaked in 1978 when imports of PVC film and sheet accounted for 2.1 percent of the total consumption of all products covered by this summary.

Apparent consumption for flexible products of the large-volume resins is shown tables 2. 3. and 4, PE, PP, and PVC, respectively. Consumption of flexible PE products rose steadily from 1975 to 1979. Consumption in 1980 is estimated to have decreased slightly more than 5 percent from the 1979 level of 4.6 billion pounds. Consumption of PP has increased rapidly since 1978 and this is expected to continue. Estimated consumption in 1980 jumped 25 percent compared with the 265 million pounds of the previous year. Consumption of PVC, which increased during 1975-79, is estimated to have decreased in 1980 to about 715 million pounds.

U.S. production

Producers' shipments of film, strips, sheets, rods, and other profile shapes increased steadily from an estimated $3.0 billion in 1975 to $7.8 billion in 1979 as shown in table 5. Volume of these articles went from an estimated 5.5 billion pounds in 1975 to 7.6 billion pounds in 1979 for a rate

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of growth of about 8 percent per year. PVC, HDPE, LDPE, and PP film and sheets are the major volume products and their production is shown in table 6. For the same time span, the value of shipments increased 20 percent per year, primarily because of rising prices for oil and gas. Producer shipments for 1980 are estimated to have been 8.2 billion pounds, valued at about $9.1 billion. Business inventories of these products declined from 1977 to 1979 and this trend is expected to have continued through 1980.

Film and sheet account for about one-quarter of the shipments of the plastics industry, of which about 75 percent is used in packaging. Film, which is less than 10 mils (0.010 inch) in thickness, accounts for 90 to 95 percent of total output. About 15 to 20 percent of the film is 1 mil or less in thickness. Excluding the film converted to trash bags, 75 percent is transparent (water-white), 5 to 10 percent is translucent, and less than 20 percent is opaque. Tables 4, 5, and 6 show the domestic production volumes of PE, PVC, and PP flexible film and sheet. In 1979, these three plastics products accounted for about 5.6 million pounds, or 74 percent of the total production of 7.6 billion pounds of all products included in this summary. There were steady increases in consumption and production for each of these three products from 1975 to 1979. Additional production and shipments data are shown in tables 1 to 7.

U.S. imports 1/

Import trends.--PVC film and sheet led the other products of this summary imports, accounting for 143 of a total of 338 million pounds imported in 1979. High-strength, high-priced polyester was second with imports of 57 million pounds. Polypropylene and polyethylene film and sheet followed far behind. This contrasts with production of film and sheet in which the volume of polyethylene was four times the combined total of production of PVC and PP film and sheet. The remainder of the imports entering the United States under TSUS items 771.20 through 771.55 were based mainly on acrylic, cellulosic, and rubber polymers. Profile forms accounted for about 4 percent of imports.

Imports rose steadily in value from $71 million in 1975 to $308 million in 1979. In volume, the increase was from 94 million pounds in 1975 to 338 million pounds in 1979. The ratio of imports to production increased from about 1.7 percent to about 4.5 percent by volume and from about 2.4 percent to about 3.6 percent by value during this period.

Major sources of imports, in decreasing order of value in 1979, were Japan, West Germany, Taiwan, the United Kingdom, and Belgium. Major sources of imports to the United States by volume in 1979 were Taiwan, Japan, West Germany, Canada, the United Kingdom, and Belgium, in decreasing order.

Japan exported about 76 million pounds to the United States in 1979; about 30 million pounds, or 40 percent, of which were PVC and PP flexible film, strip, and sheet.

1/ See tables 8 and 9 for all imports, tables 10 to 12 for imports of individual plastics types, and tables 13 to 16 for GSP imports.

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West Germany exported about 50 million pounds to the United States in 1979; about 80 percent, or a little more than 40 million pounds of these exports were flexible film, strips, and sheet of PVC.

Canada exported about 50 million pounds to the United States in 1979. Just over 25 percent of the imported polyethylene came from Canada, or about 3 million pounds of flexible film, strips, and sheets of polyethylene. The majority of Canadian exports to the United States in 1979 are found within the basket categories of rubber or plastics flexible film, strips, and sheets or within TSUSA items 771.4224 through 771.4254 (1980 and 1981 TSUSA items are 771.4330 through 771.4350).

Taiwan was the leader in volume of exports to the United States in 1979; this amounted to about 86 million pounds, of which 73 million pounds was flexible film, strip, and sheet of PVC. Domestic manufacturers have voiced an opinion of being threatened by these imports, which in January-August 1980 were more than half the U.S. imports of flexible products of PVC from all sources.

The United Kingdom and Belgium each accounted for about 24 million pounds of U.S. imports in 1979; only about 6 million pounds of these imports were products of PE, PVC, and PP. Almost 30 percent of U.S. imports from the United Kingdom and Belgium were flexible film, strip, and sheet of polyester resins.

There are many types of importers bringing there products into the United States. They include distributors, U.S. subsidiaries of foreign plastics manufacturers, leading U.S. chemical companies, and competing product companies such as paper processors, in addition to the oridinary industry consumers.

Imports under the Generalized System of Preferences.--Imports under the GSP accounted for 30 percent of the quantity and 18 percent of the total value for January-August 1980. Taiwan, Malaysia, the Republic of Korea, and Israel are the leading GSP-eligible countries exporting these products to the United States and accounted for about 90 percent of GSP imports and by volume and value; and 28 percent of all imports by volumes, and 17 percent of all imports by weight.

The International Market

International market profile

Internationally, the largest markets for film, sheet, and other profile forms are the developed countries and areas, such as Canada, the EEC, and Japan. The competitive situation in those countries is similar to that in the United States. Although the United States is slightly in the lead in quality and variety of products, certain European articles such as PVC window sashes, and high-density shopping bags (especially in grocery store applications at the checkout counter) are much further along in development than in the United States. Similarly, although the United States is one of the largest producers

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of packaging machinery equipment, if not the largest currently, West Germany ranks as the largest exporter of machinery with a reported 70 percent of the market. 1/

Because of the plastics materials, processing machinery, and technological know-how are available all over the world, competition for export markets is keen. In most of the less-developed countries, the basic plastics, whether locally produced or imported, cost more than in the developed nations, but this is offset by lower labor costs. In these countries, the duties on the plastics materials typically is low, whereas the tariff on plastics products such as film and sheet is very high. This is contrary to the situation in the United States where tariffs on raw materials are higher, these countries can sell their products in the United States under more advantageous conditions.

U.S. exports

As shown in tables 17 to 20, exports of the products in this summary were about 5.5 percent of the volume produced in 1975-80, and about 9 percent of the value. PE, PP, and PVC represented slightly more than 30 percent of the U.S. exports of film, sheet, and other profile forms of plastics or rubber. Cellulose products and other products, n.s.p.f., represented the remainder of the exports. Table 1 shows that U.S. exports consists mostly of high-priced specialty products, the unit value for these is much higher than the unit values for either domestic consumption or imports. Worldwide demand for such types of U.S. products seems to have been increasing annually at about 13 percent per year through 1980. The exported specialty products tend to be the high-technology, high-quality, and high-value grades of film, sheet, and other profile forms. The United States has consistently maintained a positive balance of trade in these products, although imports have been growing more rapidly than exports for some years. U.S. producers would like to export more but are hindered by transportation costs and high duties. Such costs, even after the Multilateral Trade Negotiations, are much higher abroad than in the United States; a sore point with the U.S. producers.

The principal markets for U.S. exports, indecreasing order of value in 1979, were Canada, Belgium, West Germany, and the United Kingdom. These countries accounted for about 44 percent of the total value of exports. In volume, Mexico and Venezuela ranked higher than the United Kingdom. Other major markets are Japan and Australia.

1/ Food and Drug Packaging, May 1978, p. 37.

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Appendix A

Rates of Duty

United States: Schedule 7, Part 12, Subpart B of the Tariff Schedules of the United States Annotated (1981)

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GSP	Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
					1	LDDC	2
			Articles not specially provided for wholly or almost wholly of reinforced or laminated plastics:				
			Laminated:				
A	770.05	00	Plates or sheets	lb	4.8% ad val.		42.5% ad val.
A	770.07	00	Other	lb	9.3% ad val.	4.4% ad val.	64% ad val.
A	770.10	00	Other	lb	9.6% ad val.	6.3% ad val.	56% ad val.
			Expanded, foamed, or sponge rubber or plastics, and articles not specially provided for wholly or almost wholly of such rubber or plastics:				
A	770.30	00	Not flexible	X	7.7% ad val.	5.3% ad val.	80% ad val.
			Flexible:				
A	770.40	00	Of polyurethane	X	5.6% ad val.	4.2% ad val.	25% ad val.
A	770.45	00	Of cellulose	X	16.3% ad val.	8.1% ad val.	60% ad val.
A	770.70	00	Of natural rubber	X	5.6% ad val.	4.2% ad val.	25% ad val.
A	770.80	00	Other	X	11% ad val.	6.6% ad val.	30% ad val.

Subpart B. - Rubber and Plastics Waste and Scrap; Rubber and Plastics Film, Strips, Sheets, Plates, Slabs, Blocks, Filaments, Rods, Tubing and Other Profile Shapes

Subpart B headnotes:

1. This subpart covers rubber or plastics products (other than waste or scrap) in the following forms:
   (a) blocks and slabs in bulk forms;
   (b) film, strips, sheets, and plates, all the foregoing (whether or not printed, embossed, polished, or otherwise surface-processed) made or cut into rectangular pieces over 15 inches in width and over 18 inches in length; and
   (c) filaments, rods, seamless tubing, and profile shapes, all the foregoing whether or not polished or otherwise surface processed, or cut into lengths which are over 15 inches.

2. This subpart does not cover —
   (i) printed matter provided for in part 5 of schedule 2;
   (ii) man-made fibers, as defined in part 1E of schedule 3;
   (iii) articles provided for in subpart A of this part;

Note: For explanation of the symbol "X" or "A*" in the column entitled "GSP", see general headnote 3(c).

GSP	Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty 1	Rates of Duty LDDC	Rates of Duty 2
			(iv) film, strips, sheets, and plates, which -- (A) have been made or cut into non-rectangular shapes of any size, or (B) measure not over 15 inches in width, or (C) measure not over 18 inches in length, or (D) have been ground on the edges, drilled, milled, hemmed, or otherwise usefully processed (except surface-processed); or (v) filaments, rods, seamless tubing, and profile shapes, which have been made or cut into lengths measuring not over 15 inches, or which have been ground on the ends, drilled, milled, or otherwise processed (except surface-processed). The products described in (iv) and (v) are classifiable as articles in subpart C of this part or under descriptions elsewhere in the schedules.				
			3. The provisions in this subpart applicable to waste and scrap of rubber or plastics do not apply to waste and rags of man-made fibers (see schedule 3) or to any waste or scrap which has been cleaned, ground, melted, made into pellets, or otherwise processed.				
			Waste and scrap, of rubber or plastics, fit only for remanufacture:				
A	771.05	00	Cellulose acetate	Lb.	3.2¢ per lb.	1.5¢ per lb.	50¢ per lb.
	771.10	00	Rubber	Lb.	Free		Free
	771.15	00	Other	Lb.	Free		10% ad val.
			Film, strips, sheets, plates, slabs, blocks, filaments, rods, seamless tubing, and other profile shapes, all the foregoing wholly or almost wholly of rubber or plastics:				
			Of cellulosic plastics materials:				
A	771.20		Of cellulose acetate		3.2% ad val.	2.9% ad val.	30.5% ad val.
		10	Film, strips, and sheets	Lb.			
		30	Other	Lb.			
A	771.25	00	Of vulcanized fiber	Lb.	3.8% ad val.	3.1% ad val.	30% ad val.
			Other:				
			Film, strips, and sheets:				
A	771.30	00	Not over 0.003 inch in thickness	Lb.	9.8% ad val.	6.2% ad val.	45% ad val.
A	771.31	00	Over 0.003 inch in thickness	Lb.	4.8% ad val.	3.7% ad val.	28.5% ad val.
A	771.35	00	Other	Lb.	4.1% ad val.		18% ad val.

Note: For explanation of the symbol "A" or "A*" in the column entitled "GSP", see general headnote 3(c).

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GSP	Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty 1	LDDC	2
			Film, strips, sheets, plates, slabs, blocks, filaments, rods, seamless tubing, and other profile shapes, all the foregoing wholly or almost wholly of rubber or plastics (con.):				
			Not of cellulosic plastics materials:				
			Film, strips, and sheets, all the foregoing which are flexible:				
A	771.40	00	Made in imitation of patent leather.....	Sq. yd..	3.8% ad val.	3.1% ad val.	25% ad val.
			Other:				
A	771.41	00	Of materials other than polyester, polyvinyl chloride, polyethylene, or polypropylene, over 0.006 inch in thickness, and not in rolls.....	Lb.....	6% ad val.		25% ad val.
A	771.43		Other.....	.....	5.6% ad val.	4.2% ad val.	25% ad val.
		10	Of polyester.....	Lb.			
		12	Of polyvinyl chloride.....	Lb.			
		14	Of polyethylene.....	Lb.			
		16	Of polypropylene.....	Lb.			
		20	Of polymethyl methacrylate.....	Lb.			
			Other:				
		30	Not over 0.009 inch in thickness.....	Sq. yd.			
			Over 0.009 inch in thickness:				
		34	In rolls.....	Sq. yd			
		50	Other.....	Sq. yd.			
			Other:				
A*	771.45	00	Of acrylic resin.....	Lb.....	8.5¢ per lb.		50¢ per lb.
A	771.50	00	Of casein.....	Lb.....	3.2% ad val.	2.7% ad val.	17% ad val.
A	771.55	00	Other.....	Lb.....	9% ad val.	5.8% ad val.	35% ad val.

Subpart C. - Specified Rubber and Plastics Products

Subpart C headnote:

1. For the purposes of this subpart, cord, fabric, wire, or non-rubber or non-plastic reinforcing or traction-increasing media shall be disregarded in determining the component material of chief value in tires, or in tubes for tires (items 772.45 through 772.60, inclusive).

Subpart C statistical headnote:

1. For the purposes of item 772.51, rim size is the inner diameter of the tire measured bead to bead.

Note: For explanation of the symbol "A" or "A*" in the column entitled "GSP", see general headnote 3(c).

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Appendix B

Concordance of TSUS numbers, Schedule B numbers, SIC numbers, SITC numbers, and CCCN numbers

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Rubber and plastic film, strips, sheets, rods, tubes, and other profile shapes: TSUS item numbers, schedule B numbers, SIC numbers, SITC numbers, and CCCN (BTN) numbers included in this commodity group

TSUS item No.	Schedule B No.	SIC No.	SITC No.	CCCN (BTN) No.
771.20	771.2400(pt)	3079(pt)	584.3(pt)	39.03(pt)
	771.2600(pt)		585.2(pt)	39.07(pt)
	771.2700(pt)			
771.25	771.2200	3079(pt)	584.9(pt)	39.03(pt)
	771.3400		585.2(pt)	39.07(pt)
771.30	771.2100(pt)	3079(pt)	584.1(pt)	39.03(pt)
	771.2600(pt)		584.2(pt)	39.07(pt)
	771.2800(pt)		584.9(pt)	
	771.2400(pt)		585.2(pt)	
771.31	771.2100(pt)	3079(pt)	584.1(pt)	39.03(pt)
	771.2400(pt)		584.2(pt)	39.07(pt)
	771.2600(pt)		584.9(pt)	
	771.2800(pt)		585.2(pt)	
771.35	771.2700(pt)	3079(pt)	584.1(pt)	39.03(pt)
	771.2800(pt)		584.2(pt)	39.07(pt)
	771.3200		584.9(pt)	
	771.3400		585.2(pt)	
	771.3700			
771.40	771.5200(pt)	3079(pt)	583.4(pt)	39.02(pt)
			583.5(pt)	39.07(pt)
771.41	771.5200(pt)	3079(pt)	583.4(pt)	39.01(pt)
	771.4100(pt)	3069(pt)	583.5(pt)	39.02(pt)
	771.4300(pt)		585.2(pt)	39.05(pt)
			585.1(pt)	39.06(pt)
			583.9(pt)	39.07(pt)
			583.8(pt)	40.14(pt)
			583.7(pt)	40.01(pt)
			583.6(pt)	40.02(pt)
			583.5(pt)	40.05(pt)
			582.1(pt)	40.08(pt)
			582.2(pt)	40.15(pt)
			582.3(pt)	
			582.4(pt)	
			582.5(pt)	
			582.6(pt)	
			582.7(pt)	
			582.8(pt)	
			582.9(pt)	
			621.0(pt)	
			628.9(pt)	

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Rubber and plastic film, strips, sheets, rods, tubes, and other profile shapes: TSUS item numbers, schedule B numbers, SIC numbers, SITC numbers, and CCCN (BTN) numbers included in this commodity group--Continued

TSUS item No.	Schedule B No.	SIC No.	SITC No.	CCCN (BTN) No.
771.43	771.4100(pt)	3079(pt)	582.3(pt)	39.01(pt)
	771.4300(pt)	3069(pt)	582.9(pt)	39.02(pt)
	771.4400(pt)		583.1(pt)	39.07(pt)
	771.4600(pt)		583.2(pt)	40.01(pt)
	771.4900(pt)		583.3(pt)	40.02(pt)
	771.5200(pt)		583.4(pt)	40.05(pt)
			583.5(pt)	40.08(pt)
			583.7(pt)	40.14(pt)
			585.2(pt)	40.15(pt)
			628.9(pt)	
771.45	771.4100(pt)	3079(pt)	585.2(pt)	39.02(pt)
	771.6000(pt)		585.6(pt)	39.07(pt)
771.50	771.6000(pt)	3079(pt)	585.2(pt)	39.04(pt)
	771.5200(pt)			39.07(pt)
771.55	771.4300(pt)	3079(pt)	582.1(pt)	39.01(pt)
	771.4400(pt)	3069(pt)	582.2(pt)	39.02(pt)
	771.4600(pt)		582.3(pt)	39.04(pt)
	771.4900(pt)		582.4(pt)	39.05(pt)
	771.5200(pt)		582.5(pt)	39.06(pt)
	771.5600		582.6(pt)	39.07(pt)
	771.5700		582.7(pt)	40.01(pt)
	771.6000(pt)		582.8(pt)	40.02(pt)
			582.9(pt)	40.05(pt)
			583.1(pt)	40.06(pt)
			583.2(pt)	40.08(pt)
			583.3(pt)	40.14(pt)
			583.4(pt)	40.15(pt)
			583.5(pt)	40.16(pt)
			583.6(pt)	
			583.7(pt)	
			583.8(pt)	
			583.9(pt)	
			585.1(pt)	
			585.2(pt)	
			621.0(pt)	
			628.9(pt)	

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Appendix C

Statistical Tables

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Table 1.--Film, sheet, and profile forms of plastics and rubber: U.S. production, exports, imports, and apparent consumption, 1975-80

(Quantity in thousands of pounds: value in thousands of dollars; unit value per pound)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1975	1/ 5,525,730	284,491	93,741	5,334,980	1.8
1976	1/ 6,118,875	351,365	144,292	5,911,802	2.4
1977	1/ 6,513,570	358,925	177,661	6,332,306	2.8
1978	1/ 6,881,805	378,007	295,472	6,799,270	4.3
1979	1/ 7,576,380	479,898	338,023	7,434,505	4.5
1980 2/	8,184,000	518,000	315,000	7,981,000	4.0
	Value				
1975	3,019,395	299,283	71,160	2,791,272	2.4
1976	3,867,248	381,395	113,902	3,599,755	2.9
1977	4,181,600	407,648	152,305	3,926,257	3.6
1978 2/	4,754,987	457,572	255,536	4,552,951	5.4
1979 2/	7,779,192	614,063	307,617	7,472,746	4.0
1980 2/	9,100,000	791,200	329,500	8,638,300	3.8
	Unit value				
1975	$0.57	$1.05	$0.76	$0.52	-
1976	.63	1.09	.79	.61	-
1977	.64	1.14	.86	.62	-
1978	.69	1.21	.86	.67	-
1979	1.02	1.28	.91	1.00	-
1980 2/	1.11	1.53	1.05	1.08	-

1/ Modern Plastics, 1976, 1977, 1978, 1979, and 1980 January issues and industry estimates.

2/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 2.--Polyethylene flexible film and sheet: U.S. production exports, imports, and apparent consumption, 1975-80

(Quantity in thousands of pounds; value in thousands of dollars; unit value per pound)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1975	1/ 3,430,980	26,506	3,811	3,408,285	2/
1976	1/ 3,632,936	39,060	5,376	3,599,252	2/
1977	1/ 3,811,693	45,226	6,737	3,759,730	2/
1978	1/ 4,231,003	46,985	9,887	4,193,905	2/
1979	1/ 4,601,789	49,641	11,660	4,563,808	0.3
1980 3/	1/ 4,362,593	53,226	12,564	4,321,931	0.3
	Value				
1975	4/	18,134	2,237	4/	5/
1976	812,026	24,358	3,669	791,337	0.5
1977	893,700	29,308	4,208	868,600	0.5
1978	921,600	35,914	6,735	892,421	0.8
1979	4/	37,448	9,971	4/	4/
1980 3/	4/	58,360	11,840	4/	4/
	Unit value				
1975	4/	$0.68	$0.59	-	-
1976	5/	.62	.68	-	-
1977	5/	.65	.62	-	-
1978	5/	.76	.68	-	-
1979	4/	.75	.86	-	-
1980 3/	4/	1.08	.94	-	-

1/ Industry sources.
2/ Less than 0.05 percent.
3/ Estimated by the staff of the U.S. International Trade Commission.
4/ Not available.
5/ Data not comparable as it is derived from 2 separate sources.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 3.--Polypropylene flexible film and sheet: U.S. production, exports, imports, and apparent consumption, 1975-80

(Quantity in thousands of pounds; value in thousands of dollars; unit value per pound)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1975	2/ 142,531	1/	6,193	1/	1/
1976	2/ 182,618	1/	9,726	1/	1/
1977	2/ 202,655	1/	16,948	1/	1/
1978	2/ 242,745	13,569	18,771	247,947	7.6
1979	2/ 273,927	28,182	18,902	264,647	7.1
1980 3/	385,275	63,894	18,346	339,727	5.4
	Value				
1975	1/	1/	5,815	1/	1/
1976	244,851	1/	8,505	1/	1/
1977	299,200	1/	14,183	1/	1/
1978	333,100	13,961	17,675	336,784	5.2
1979	1/	27,349	20,161	1/	1/
1980 3/	1/	55,005	23,681	1/	1/
	Unit value				
1975	1/	1/	$0.94		
1976	4/	1/	.87		
1977	4/	1/	.84		
1978	4/	$1.03	.94		
1979	1/	.97	1.07		
1980 3/	1/	.90	1.29		

1/ Not available.

2/ Modern Plastics, 1976, 1977, 1978, 1979, and 1980 January issues and industry estimates.

3/ Estimated by the staff of the U.S. International Trade Commission.

4/ Data not comparable as it is derived from 2 separate sources.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 4.--Polyvinyl chloride flexible film and sheet: U.S. production, exports, imports, and apparent consumption, 1975-80

(Quantity in thousands of pounds; value in thousands of dollars; unit value per pound)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent of imports to consumption
	Quantity				
1975	1/ 553,426	40,078	55,033	568,381	9.7
1976	1/ 679,514	47,765	83,456	715,205	11.7
1977	1/ 579,001	56,335	91,687	614,353	14.9
1978	1/ 622,659	50,809	142,717	714,567	20.0
1979	1/ 728,465	70,026	142,692	801,131	17.8
1980 2/	661,274	77,823	132,339	715,720	18.5
	Value				
1975	3/	39,124	27,598	3/	3/
1976	3/	59,552	41,785	3/	3/
1977	3/	68,635	51,880	3/	3/
1978	3/	86,775	83,418	3/	3/
1979	3/	111,572	93,423	3/	3/
1980 2/	3/	135,370	106,250	3/	3/
	Unit value				
1975	3/	$0.98	$0.50		
1976	3/	1.25	.50		
1977	3/	1.22	.57		
1978	3/	1.71	.58		
1979	3/	1.59	.55		
1980 2/	3/	1.73	.80		

1/ Society of Plastics Industry's annual data for calendered and extruded film and sheet (includes all other calendering uses).
2/ Estimated by the staff of the U.S. International Trade Commission.
3/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 5.--Film, sheet, and profile forms of plastics and rubber: U.S. shipments, 1975-80

Type	1975 1/		1976		1977	
	Value	Percent of total	Value	Percent of total	Value	Percent of total
	1,000 dollars		1,000 dollars		1,000 dollars	
Of plastic:						
Film and sheet	2,701,139	89.5	3,498.920	91.8	3,783,828	90.5
Profile shapes 1/	271,172	9.0	256,080	6.7	330,872	7.9
Subtotal	2,972,311	98.4	3,755,000	98.5	4,114,700	98.4
Of rubber: Film and sheet 4/	47,084	1.6	56,124	1.5	66,900	1.6
Total	3,019,395	100.0	3,867,248	100.0	4,181,600	100.0

Type	1978		1979		1980 1/	
	Value	Percent of total	Value	Percent of total	Value	Percent of total
	1,000 dollars		1,000 dollars		1,000 dollars	
Of plastic:						
Film and sheet	4,376,000	92.0	2/ 7,000,000	90.0	8,169,000	90.0
Profile shapes 1/	306,200	6.4	3/ 700,000	9.0	816,900	9.0
Subtotal	4,682,200	98.0	7,700,000	99.0	8,985,900	99.1
Of rubber: Film and sheet 4/	1/ 72,787	1.5	1/ 79,192	1.0	86.141	.9
Total	4,754,987	100.0	7,779,192	100.0	9,072,041	100.0

1/ Estimated by the staff of the U.S. International Trade Commission.
2/ Estimated by the Society of Plastics Industry, Inc. (SPI) for extruded film and sheet only.
3/ Estimated by SPI.
4/ Industry contact estimates that there is insignificant amounts of rubber profiles produced.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--Because of rounding, figures may not add to the totals shown.

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Table 6.--PVC, HDPE, LDPE, and PP film and sheet U.S. production, 1975-80

(In thousands of pounds)

Item	1975	1976	1977	1978	1979	1980
PVC: Film and sheet	1/ 553,426	1/ 679,514	1/ 579,001	1/ 622,659	1/ 728,465	2/ 661,274
HDPE:						
Film	83,790	112,455	136,710	189,630	211,680	214,988
Sheet	6,615	11,025	13,230	19,845	22,050	22,050
Total	90,405	123,480	149,940	209,475	233,730	237,038
LDPE:						
Film	3,307,500	3,505,950	3,658,095	4,017,510	4,363,695	4,125,555
Sheet	3,307	3,506	3,658	4,018	4,364	4,126
Total	3,310,807	3,509,456	3,661,753	4,021,528	4,368,059	4,129,681
PP:						
Film	3/ 141,120	3/ 180,810	3/ 200,655	3/ 240,354	3/ 271,215	2/ 381,465
Sheet	1,411	1,808	2,000	2,400	2,712	3,810
Total	142,531	182,618	202,655	242,745	273,927	385,275
Grand total	4,097,169	4,495,068	4,593,349	5,096,407	5,604,181	5,413,268

1/ Society of Plastics Industry's data for calendered and extruded film and sheet (includes all other calendering uses).

2/ Estimated by the staff of the U.S. International Trade Commission.

3/ Modern Plastics, 1976, 1977, 1978, 1979, and 1980 January issues.

Source: Derived from industry estimates, except as noted.

Table 7.--Low-density polyethylene film: U.S. production, by principal end uses, 1975-80 and 1985

(In thousands of metric tons)

Item	1975	1976	1977	1978	1979	1980	1985
Packaging food:							
Bakery goods	94	101	135	109	1/ 115.6	2/ 116.5	1/ 124.7
Candy confectionery	11	14	15	16	1/ 2.5	2/ 2.5	1/ 2.3
Frozen food	25	31	35	43	1/ 18.1	2/ 18.4	1/ 21.3
In store 3/	30	36	41	48	1/ 25.4	2/ 26	1/ 33.1
Meat and poultry	20	23	28	34	1/ 35.3	2/ 36	1/ 39
Produce	73	109	121	77	1/ 69.8	2/ 68.5	1/ 66.2
Miscellaneous	9	12	13	22	22	2/ 22	2/ 30
Total	262	316	388	349	287.8	289.9	316.6
Packaging, nonfood:							
Garment bags	41	44	57	60	1/4/ 96.1	2/4/ 96.2	1/4/ 98.9
Industrial liners	134	164	189	209	1/ 183.7	2/ 190	1/ 232.7
Shipping bags	59	68	16	24	16	5/	5/
Rack and counter	66	45	69	79	1/ 83.9	2/ 85	1/ 97.5
Miscellaneous packaging:							
Heavy-duty shipping sacks	5/	5/	5/	5/	1/ 24.9	2/ 20	1/ 12.2
Pallet overwrap:							
Stretch	5/	5/	5/	5/	1/ 259.2	2/ 30	1/ 98.4
Shrink	46	55	36	45	1/ 39.7	2/ 39	1/ 29.9
Other shrink film	30	33	39	45	81	5/	5/
Soft goods	60	65	75	83	5/	5/	5/
Overwrap-case	5/	5/	5/	5/	1/ 91.6	2/ 100	1/ 168.7
Total	436	474	481	545	642.8	560.2	738.3
Total packaging	698	790	869	894	930.6	850.1	1054.9
Nonpackaging:							
Agriculture	41	58	25	49	1/ 54.4	2/ 56	1/ 62.6
Greenhouses	5/	5/	5/	5/	1/ 17.7	2/ 18	1/ 19
Fumigation	5/	5/	5/	5/	1/ 9.2	2/ 9.2	1/ 9.2
Mulch	5/	5/	5/	5/	1/ 15.9	2/ 16	1/ 7.7
Pond and ditch liners	5/	5/	5/	5/	1/ 6.3	2/ 6.7	1/ 9.5
Miscellaneous	5/	5/	5/	5/	1/ 5	2/ 5.1	1/ 7

See footnotes at end of table.

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Table 7.--Low-density polyethylene film: U.S. production, by principal end uses, 1975-80 and 1985--Continued

(In thousands of metric tons)

Item	1975	1976	1977	1978	1979	1980	1985
Nonpackaging--Continued:							
Construction	51	74	108	80	1/ 84.8	2/ 85	1/ 104.3
Diaper/disposables/sanitary napkins	45	47	53	59	1/ 53.1	2/ 56	1/ 70.3
Ice bags	5/	5/	5/	5/	1/ 8.2	2/ 8.9	1/ 12.9
Refuse bags	309	331	364	425	1/ 392.3	2/ 399	1/ 556.5
Rubber industry	11	14	17	18	1/ 19.1	2/ 19	1/ 18.1
Household wrap	64	64	67	68	1/ 39.9	2/ 40	1/ 54.4
Total	521	588	634	699	705.6	718.9	941.5
Miscellaneous (both packaging and nonpackaging):							
Medical, surgical	5/	5/	5/	5/	1/ 9.3	2/ 11.5	1/ 19.5
Medical, nonsurgical	5/	5/	5/	5/	1/ 10	2/ 10.2	1/ 11.6
Multiwall sack liners	5/	5/	5/	5/	1/ 15.9	2/ 15	1/ 7.9
Other	281	212	156	229	1/ 308.2	2/ 265	1/ 670
Total	281	212	156	229	343.4	302	709.6
Grand total	1/ 1,500	1/ 1,590	1/ 1,659	1/ 1,822	1/ 1,979	1/ 1,871	1/ 2,706

1/ Industry estimates.
2/ Estimates by the staff of the U.S. International Trade Commission.
3/ Includes retail bags in 1979, 1980, and 1985.
4/ Includes textile industry uses and drycleaning bags.
5/ Not available.

Source: Modern Plastics, 1976, 1977, 1978, 1979 and 1980 January issues, except as noted.

Table 8.--U.S. imports by TSUSA item for 1978, 1979, and January-August 1979 and January-August 1980

TSUSA item No.	Description	1978		1979		January-August 1979		January-August 1980	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars
771.2010	Cellulose acetate film, strips, and sheets	6,161	11,690	4,957	9,751	3,445	6,669	3,380	7,167
771.2030	Cellulose acetate plates and other profile shapes N.E.S. 1/	626	2,361	321	1,271	310	1,235	9	63
771.2500	Cellulose plastic profile shapes: of vulcanized fiber	1,860	1,802	767	782	483	501	1,135	1,083
771.3000	Cellulose film, strips, and sheets, n.e.s. over 0.003 inch thick	11,494	12,139	18,728	20,848	11,826	12,677	7,463	9,436
771.3100	Cellulose film, strips, and sheets, n.e.s. over 0.003 inch thick	207	326	523	716	337	436	168	389
771.3500	Cellulose plastics profiles, n.s.p.f. 2/	65	265	30	363	15	102	79	357
771.4000	Plastic imitation patent leather, not cellulose	3/ 1,507	1,684	3/ 2,189	2,484	3/ 1,301	1,553	3/ 1,063	1,407
771.4100	Rubber or plastics film, not in rolls, over 0.006 inch thick	-	-	-	-	-	-	6,280	5,761
771.4210	Polyester, flexible film, strips, and sheet	50,233	71,192	57,416	88,044	38,308	59,051	4/ 37,439	62,969
771.4212	PVC, flexible film, strips, and sheet	142,717	83,418	142,692	93,423	95,945	59,474	4/ 88,984	67,639
771.4214	PE flexible film, strips, and sheet	9,887	6,735	11,660	9,971	7,581	6,432	4/ 8,169	7,638
771.4216	PP, flexible film, strips, and sheet	18,771	17,675	18,902	20,161	11,940	12,131	4/ 11,589	14,249
771.4218	Polymethylmethacrylate, flexible film, strips, and sheet	3,620	2,503	5,749	4,316	3,974	2,834	4/ 789	901
771.4224	Rubber or plastics, flexible film strips, sheets, n.e.s., not over 0.009 inch thick	3/ 17,665	7,068	3/ 11,672	4,768	3/ 7,943	3,334	3/4/ 7,709	3,511

See footnotes at end of table.

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Table 8.--U.S. imports by TSUSA item for 1978, 1979, and January-August 1979 and January-August 1980--Continued

TSUSA item No.	Description	1978		1979		January-August 1979		January-August 1980	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
771.4234	Rubber or plastics, flexible film, strips, sheets, n.e.s. in rolls, over 0.009 inch thick--	3/ 16,039	7,320	3/ 41,288	14,516	3/ 25,885	9,009	3/4/ 23,634	11,034
771.4254	Rubber or plastics, flexible film, strips, sheets, n.e.s., not in rolls, over 0.009 inch thick----------	3/ 4,778	14,442	3/ 5,373	12,422	3/ 4,593	8,518	3/4/ 1,381	4,062
771.4500	Acrylic resin plastics profile shapes, n.s.p.f----------	1,955	2,398	3,775	3,781	2,706	2,408	1,315	1,426
771.5000	Casein plastics profile n.s.p.f----------	79	111	39	76	37	72	1	2
771.5500	Rubber or noncellulosic plastic profile shapes, n.s.p.f-------	9,765	14,804	11,941	19,923	7,992	12,506	9,001	13,959
	Total----------	297,429	257,933	338,022	307,616	224,621	198,942	209,588	213,053

1/ Not elsewhere specified.
2/ Not specially provided for.
3/ Estimated by the staff of the U.S. International Trade Commission.
4/ 1980 TSUSA number is different, but figures are directly comparable.

Source: Official statistics from the U.S. Department of Commerce, except as noted.

Table 9.--Film, sheet, and other profile forms of plastics and rubber: U.S. imports for consumption, by principal sources, 1975-79 and January-August 1979 and January-August 1980

Source	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
Japan	41,585	53,121	61,009	82,989	76,359	52,831	46,133
FR Germ	14,152	26,579	32,177	57,296	50,468	33,111	29,428
Taiwan	15,512	25,790	31,988	66,592	86,446	58,542	56,916
U King	7,072	11,154	15,462	22,733	23,846	15,321	15,208
Belgium	3,089	9,663	11,878	15,464	23,097	16,491	11,544
Canada	5,121	6,907	8,478	24,638	49,970	29,710	31,492
France	2,249	4,250	6,277	5,933	5,550	3,767	3,110
Italy	1,232	840	1,758	5,709	5,651	4,036	4,242
All other	3,729	5,987	8,634	14,118	16,636	10,811	11,515
Total	93,741	144,292	177,661	295,472	338,023	224,620	209,590
	Value (1,000 dollars)						
Japan	26,746	35,812	47,268	66,040	72,785	47,531	50,577
FR Germ	10,904	17,554	25,096	55,483	58,073	37,276	35,884
Taiwan	6,008	9,607	12,566	28,061	42,594	26,867	34,353
U King	9,836	14,311	23,417	36,525	38,009	24,701	29,456
Belgium	5,893	18,553	16,584	19,595	33,616	23,612	17,221
Canada	4,163	5,961	8,195	17,715	25,762	14,995	18,530
France	2,874	5,293	8,748	8,377	9,091	5,891	6,519
Italy	1,513	1,636	1,283	8,019	8,376	5,733	6,018
All other	3,223	5,776	9,147	15,722	19,311	12,336	14,494
Total	71,160	113,902	152,305	255,536	307,617	198,941	213,053
	Unit value (per pound)						
Japan	$0.64	$0.67	$0.77	$0.80	$0.95	$0.90	$1.10
FR Germ	0.77	0.66	0.78	0.97	1.15	1.13	1.22
Taiwan	0.39	0.37	0.39	0.42	0.49	0.46	0.60
U King	1.39	1.28	1.51	1.61	1.59	1.61	1.94
Belgium	1.91	1.92	1.40	1.27	1.46	1.43	1.49
Canada	0.81	0.86	0.97	0.72	0.52	0.50	0.59
France	1.28	1.25	1.39	1.41	1.64	1.56	2.10
Italy	1.23	1.23	0.73	1.40	1.48	1.42	1.42
All other	0.86	0.96	1.06	1.11	1.16	1.14	1.26
Average	0.76	0.79	0.86	0.86	0.91	0.89	1.02

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 10.--Polyethylene flexible film, strips, and sheet: U.S. imports for consumption, by principal sources, 1975-79 and January-August 1979 and January-August 1980

Source	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
FR Germ.	261	713	265	1,932	3,119	1,732	2,379
Canada	927	920	1,087	1,560	3,021	2,111	1,224
Taiwan	1,475	1,675	3,339	4,309	3,865	2,390	3,253
U King.	111	555	270	171	409	259	218
Japan	862	1,231	976	520	318	242	369
Belgium	1	32	181	10	148	144	5
Israel	0	0	0	87	144	110	46
Kor Rep.	0	36	166	326	84	83	5
All other	176	213	513	472	551	459	670
Total	3,811	5,376	6,737	9,887	11,660	7,581	8,169
	Value (1,000 dollars)						
FR Germ.	257	545	124	2,248	3,755	2,320	2,760
Canada	611	867	1,044	1,261	2,460	1,707	1,065
Taiwan	533	670	1,252	1,811	1,841	1,019	2,003
U King.	202	730	466	339	860	521	665
Japan	492	642	584	436	391	309	341
Belgium	1/	51	150	25	114	109	12
Israel	-	-	-	114	109	85	44
Kor Rep.	-	23	125	145	73	71	6
All other	141	140	464	355	368	291	738
Total	2,237	3,669	4,208	6,735	9,971	6,432	7,638
	Unit value (per pound)						
FR Germ.	$0.99	$0.76	$0.68	$1.16	$1.20	$1.30	$1.16
Canada	0.66	0.94	0.96	0.81	0.81	0.81	0.87
Taiwan	0.36	0.40	0.38	0.38	0.48	0.43	0.62
U King.	1.82	1.32	1.72	1.99	2.10	2.01	3.04
Japan	0.57	0.52	0.60	0.84	1.23	1.28	0.92
Belgium	0.61	1.58	0.83	2.39	0.77	0.76	2.28
Israel	-	-	-	1.30	0.76	0.77	0.96
Kor Rep.	-	0.63	0.75	0.44	0.87	0.86	1.15
All other	0.80	0.66	0.90	0.75	0.67	0.63	1.10
Average	0.59	0.68	0.62	0.68	0.86	0.85	0.93

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 11.--Polypropylene flexible film, strips, and sheets: U.S. imports for consumption, by principal sources, 1975-79 and January-August 1979 and January-August 1980

Source	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
Japan	3,512	6,350	12,910	13,652	12,756	8,314	8,482
U King	2,405	2,855	3,420	3,914	3,917	2,317	1,114
Canada	41	130	195	564	794	516	468
FR Germ	89	85	308	127	664	199	748
France	1/	4	0	31	75	65	310
Nethlds	0	51	3	170	140	100	4
Belgium	0	0	1	91	127	127	0
Kor Rep	0	99	20	70	191	191	103
Taiwan	4	99	62	102	120	22	306
Sweden	0	2	2	0	6	2	3
All other	142	51	27	50	112	87	51
Total	6,193	9,726	16,948	18,771	18,902	11,940	11,589
	Value (1,000 dollars)						
Japan	2,601	4,546	8,639	10,267	12,043	7,486	9,709
U King	2,904	3,465	4,847	5,888	5,412	3,222	1,594
Canada	38	87	172	609	1,041	555	646
FR Germ	77	139	425	391	762	175	1,060
France	1/	10	-	70	202	173	759
Nethlds	-	56	14	213	182	122	21
Belgium	-	-	1	103	160	159	-
Kor Rep	-	79	14	25	144	144	121
Taiwan	2	38	40	60	71	15	251
Sweden	-	5	3	-	33	5	5
All other	194	79	28	48	109	75	84
Total	5,815	8,505	14,183	17,675	20,161	12,131	14,249
	Unit value (per pound)						
Japan	$0.74	$0.72	$0.67	$0.75	$0.94	$0.90	$1.14
U King	1.21	1.21	1.42	1.50	1.38	1.39	1.43
Canada	0.92	0.67	0.88	1.08	1.31	1.08	1.38
FR Germ	0.86	1.64	1.38	3.08	1.15	0.88	1.42
France	1.94	2.81	-	2.27	2.70	2.63	2.45
Nethlds	-	1.11	4.06	1.25	1.30	1.22	5.66
Belgium	-	-	0.88	1.13	1.26	1.26	-
Kor Rep	-	0.80	0.68	0.36	0.76	0.76	1.18
Taiwan	0.50	0.39	0.65	0.58	0.60	0.66	0.82
Sweden	-	1.99	1.50	-	5.68	2.18	1.90
All other	1.36	1.54	1.04	0.97	0.98	0.87	1.65
Average	0.94	0.87	0.84	0.94	1.07	1.02	1.23

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 12.--Polyvinyl chloride flexible film, strips, and sheets: U.S. imports for consumption, by principal sources, 1975-79 and January-August 1979 and January-August 1980

Source	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
FR Germ.	11,107	22,464	27,569	48,857	40,265	26,550	19,203
Taiwan	13,808	23,542	28,119	57,760	73,233	49,773	48,747
Japan	26,598	30,804	28,394	25,049	14,982	10,615	9,595
Switzld	34	43	48	134	2,279	1,006	1,356
Canada	335	1,918	2,179	1,727	2,002	1,203	2,138
U King	525	519	436	1,095	1,370	1,055	907
Italy	155	255	842	652	1,237	696	1,430
Denmark	128	284	553	995	1,125	882	1,070
All other	2,343	3,626	3,547	6,447	6,200	4,164	4,538
Total	55,033	83,456	91,687	142,717	142,692	95,945	88,984
	Value (1,000 dollars)						
FR Germ.	7,377	13,493	19,926	36,761	35,154	22,154	20,423
Taiwan	5,358	8,628	10,985	23,116	33,463	21,358	27,240
Japan	12,632	15,188	15,528	15,808	12,246	8,468	8,569
Switzld	32	34	59	103	2,865	1,224	1,898
Canada	253	1,433	2,072	1,581	1,965	1,116	1,948
U King	406	498	447	910	1,592	1,048	1,385
Italy	149	370	560	916	1,303	806	1,210
Denmark	95	201	396	779	1,106	859	1,242
All other	1,296	1,942	1,908	3,444	3,730	2,441	3,725
Total	27,598	41,785	51,880	83,418	93,423	59,474	67,639
	Unit value (per pound)						
FR Germ.	$0.66	$0.60	$0.72	$0.75	$0.87	$0.83	$1.06
Taiwan	0.39	0.37	0.39	0.40	0.46	0.43	0.56
Japan	0.47	0.49	0.55	0.63	0.82	0.80	0.89
Switzld	0.93	0.78	1.23	0.77	1.26	1.22	1.40
Canada	0.76	0.75	0.95	0.92	0.98	0.93	0.91
U King	0.77	0.96	1.02	0.83	1.16	0.99	1.53
Italy	0.96	1.45	0.66	1.41	1.05	1.16	0.85
Denmark	0.74	0.71	0.72	0.78	0.93	0.97	1.16
All other	0.55	0.54	0.54	0.53	0.60	0.59	0.32
Average	0.50	0.50	0.57	0.58	0.65	0.62	0.76

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 13.--Film, sheet, and other profile forms of plastics and rubber: U.S. imports by certain world areas including designated GSP countries, 1976-79 and January-August 1980

Item	1976	1977	1978	1979	Jan.-Aug. 1980	Jan.-Aug. 1980 percentage distribution
	Quantity (1,000 pounds)					
Gross imports	144,292	177,661	295,472	338,023	209,590	100
26 developed ctries, total	116,604	142,930	223,850	243,451	147,129	70
GSP countries, total	27,688	34,725	71,485	94,409	62,428	30
Taiwan	25,790	31,988	66,592	86,446	56,916	27
Malaysa	205	508	384	1,213	1,503	1
Israel	653	585	1,031	1,524	805	1/
Kor Rep	596	907	2,040	2,135	702	1/
Mexico	93	155	333	873	402	1/
Brazil	88	291	361	440	875	1/
Phil R	2/	1	211	682	781	1/
Hg Kong	114	153	259	378	213	1/
Other GSP	148	136	275	719	232	1/
Other	2/	6	137	163	32	1/
	Value (1,000 dollars)					
Gross imports	113,902	152,305	255,536	307,617	213,053	100
26 developed ctries, total	103,131	138,209	223,416	257,871	173,751	82
GSP countries, total	10,771	14,091	31,964	49,580	39,267	18
Taiwan	9,607	12,566	28,061	42,594	34,353	16
Malaysa	108	192	964	1,848	1,526	1
Israel	409	357	796	1,509	981	1/
Kor Rep	275	480	848	968	516	1/
Mexico	143	127	370	965	474	1/
Brazil	66	134	213	424	620	1/
Phil R	2/	2	287	410	392	1/
Hg Kong	78	119	151	304	222	1/
Other GSP	83	115	269	557	183	1/
Other	2/	5	156	167	35	1/

1/ Less than 0.5 percent.
2/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 14.--Polyethylene flexible film, strips, and sheets: U.S. imports by certain world areas including designated GSP countries, 1976-79 and January-August 1980

Item	1976	1977	1978	1979	Jan.-Aug. 1980	Jan.-Aug. 1980 percentage distribution
	Quantity (1,000 pounds)					
Gross imports	9,726	16,948	18,771	18,902	11,589	100
26 developed ctries, total	9,487	16,865	18,586	18,519	11,139	96
GSP countries, total	238	83	185	340	445	4
Kor Rep	99	20	70	191	103	1
Taiwan	99	62	102	120	306	3
Israel	5	1	13	26	26	1/
Hg Kong	-	-	-	3	10	1/
Mexico	-	-	-	1	-	
Brazil	7	-	-	-	-	
Gibralt	18	-	-	-	-	
Indnsia	9	-	-	-	-	
Other	-	-	-	43	5	1/
	Value (1,000 dollars)					
Gross imports	8,505	14,183	17,675	20,161	14,249	100
26 developed ctries, total	8,333	14,128	17,580	19,873	13,811	97
GSP countries, total	172	55	95	254	432	3
Kor Rep	79	14	25	144	121	1
Taiwan	38	40	60	71	251	2
Israel	2	1	10	30	39	1/
Hg Kong	-	-	-	7	21	1/
Mexico	-	-	-	1	-	
Brazil	26	-	-	-	-	
Gibralt	22	-	-	-	-	
Indnsia	5	-	-	-	-	
Other	-	-	-	34	6	1/

1/ Less than 0.5 percent.
2/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 15.--Polypropylene flexible film, strips, and sheets: U.S. imports by certain world areas including designated GSP countries, 1976-79 and January-August 1980

Item	1976	1977	1978	1979	Jan.-Aug. 1980	Jan.-Aug. 1980 percentage distribution
	Quantity (1,000 pounds)					
Gross imports	5,376	6,737	9,887	11,660	8,169	100
26 developed ctries, total	3,527	3,091	4,305	7,248	4,577	56
GSP countries, total	1,849	3,647	5,582	4,413	3,593	44
Taiwan	1,675	3,339	4,809	3,865	3,253	40
Israel	-	-	87	144	46	1
Kor Rep	36	166	326	84	5	1/
C Rica	10	61	131	71	24	1/
Malaysa	-	-	143	67	-	
Hg Kong	58	53	38	43	17	1/
Mexico	2	-	33	21	-	
Colomb	-	-	15	25	-	
Other GSP	68	28	1	92	248	3
Other	2/	-	-	-	-	
	Value (1,000 dollars)					
Gross imports	3,669	4,208	6,735	9,971	7,638	100
26 developed ctries, total	2,913	2,760	4,420	7,808	5,453	71
GSP countries, total	755	1,448	2,315	2,163	2,186	29
Taiwan	670	1,252	1,811	1,841	2,008	26
Israel	-	-	114	109	44	1
Kor Rep	23	125	145	73	6	1/
C Rica	6	31	111	44	16	1/
Malaysa	-	-	56	36	-	
Hg Kong	32	27	23	20	18	1/
Mexico	2/	-	29	20	-	
Colomb	-	-	23	11	-	
Other GSP	24	13	2	9	94	1
Other	2/	-	-	-	-	

1/ Less than 0.5 percent.
2/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 16.--Polyvinyl chloride flexible film, strips, and sheets: U.S. imports by certain world areas including designated GSP countries, 1976-79 and January-August 1980

Item	1976	1977	1978	1979	Jan.-Aug. 1980	Jan.-Aug. 1980 percentage distribution
	Quantity (1,000 pounds)					
Gross imports	83,456	91,687	142,717	142,692	88,984	100
26 developed ctries, total	58,730	61,663	81,776	64,734	36,781	41
GSP countries, total	24,726	30,023	60,871	77,894	52,176	59
Taiwan	23,542	28,119	57,760	73,233	48,747	55
Israel	539	502	808	1,078	545	1
Kor Rep	427	628	1,447	1,697	531	1
Malaysa	127	508	199	1,103	1,239	1
Hg Kong	7	47	185	272	137	1/
Brazil	72	214	348	313	440	1/
Colomb	-	3	32	75	7	1/
Phil R	2/	1	6	102	508	1
Other GSP	11	1	86	21	21	1/
Other	-	1	69	64	27	1/
	Value (1,000 dollars)					
Gross imports	41,785	51,880	83,418	93,423	67,639	100
26 developed ctries, total	32,629	40,048	58,717	57,182	37,943	56
GSP countries, total	9,156	11,831	24,653	36,202	29,668	44
Taiwan	8,628	10,985	23,116	33,463	27,240	40
Israel	295	296	510	949	548	1
Kor Rep	141	233	597	675	277	1/
Malaysa	48	192	68	550	894	1
Hg Kong	6	23	86	219	126	1/
Brazil	30	96	179	179	282	1/
Colomb	-	2	32	87	8	1/
Phil R	2/	2	7	57	274	1/
Other GSP	8	2	58	25	20	1/
Other	-	1	48	40	27	1/

1/ Less than 0.5 percent.
2/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 17.--Film, sheet, and other profile forms of plastics and rubber: U.S. exports of domestic merchandise, by principal markets, 1975-79 and January-August 1979, and January-August 1980

Market	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
Canada	112,563	119,003	126,617	136,275	124,327	84,535	86,164
Belgium	9,689	17,050	16,074	17,568	28,069	17,583	23,828
FR Germ	9,223	16,492	14,879	13,369	21,002	10,188	19,663
U King	11,360	12,186	10,703	12,719	17,329	11,886	11,349
Japan	4,790	12,626	16,396	12,609	16,316	7,255	13,050
Mexico	9,388	13,546	16,803	14,777	22,952	15,881	19,962
Austral	8,399	13,518	11,689	13,516	14,769	9,788	11,828
Venez	17,842	20,989	18,571	14,698	20,396	11,033	15,720
All other	101,237	125,956	127,193	142,477	214,738	131,563	187,691
Total	284,491	351,365	358,925	378,007	479,898	298,823	388,447
	Value (1,000 dollars)						
Canada	98,018	114,569	120,190	122,198	134,922	98,443	94,859
Belgium	12,760	22,114	26,477	33,724	48,723	29,689	42,779
FR Germ	13,073	21,587	23,431	32,272	47,250	28,525	45,689
U King	17,948	22,333	21,173	29,652	38,867	24,722	25,414
Japan	8,722	14,153	20,142	26,729	36,957	23,874	32,923
Mexico	11,224	17,214	19,801	20,356	31,853	20,669	25,157
Austral	11,508	19,232	17,974	21,524	27,871	17,218	24,781
Venez	22,220	21,915	19,562	15,573	23,121	12,339	22,228
All other	103,811	128,278	138,897	155,545	225,298	137,566	182,114
Total	299,283	381,395	407,648	457,572	614,063	384,164	496,983
	Unit value (per pound)						
Canada	$0.87	$0.96	$0.95	$0.90	$1.09	$1.07	$1.09
Belgium	1.32	1.30	1.65	1.92	1.74	1.68	1.86
FR Germ	1.42	1.31	1.57	2.41	2.25	2.80	2.32
U King	1.58	1.83	1.98	2.33	2.23	2.25	2.24
Japan	1.82	1.12	1.23	2.12	2.27	3.18	2.52
Mexico	1.20	1.27	1.18	1.38	1.39	1.30	1.26
Austral	1.37	1.42	1.54	1.59	1.89	1.76	2.09
Venez	1.25	1.04	1.05	1.06	1.13	1.12	1.41
All other	1.03	1.02	1.09	1.09	1.05	1.05	0.97
Average	1.05	1.09	1.14	1.21	1.28	1.29	1.27

Source: Compiled from officials statistics of the U.S. Department of Commerce.

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Table 18.--Polyethylene flexible film, strips, and sheets: U.S. exports of domestic merchandise, by principal markets, 1975-79 and January-August 1979 and January-August 1980

Market	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
Canada	14,050	14,531	17,991	22,826	15,114	10,521	8,851
Austral	234	798	1,466	2,999	2,711	2,015	2,466
U King	1,171	1,431	1,672	1,399	2,249	1,721	1,918
France	2,732	593	1,471	2,823	3,009	2,048	2,118
Italy	465	131	242	157	3,943	3,610	450
Nethlds	179	1,449	434	1,509	2,015	1,545	1,868
FR Germ	1,870	5,270	3,457	931	1,681	990	2,806
Mexico	297	571	1,266	2,382	1,938	934	1,902
All other	5,508	14,286	17,226	11,959	16,981	10,610	14,070
Total	26,506	39,060	45,226	46,985	49,641	33,995	36,450
	Value (1,000 dollars)						
Canada	8,807	9,908	11,990	12,758	10,542	7,080	9,050
Austral	234	750	1,359	3,369	2,704	1,808	5,103
U King	1,120	1,336	1,754	3,021	2,570	1,938	2,745
France	1,523	527	1,076	1,989	2,305	1,663	2,189
Italy	416	204	356	234	1,860	1,499	529
Nethlds	162	655	401	1,446	1,801	1,347	1,748
FR Germ	1,055	3,028	2,053	1,171	1,694	1,057	2,541
Mexico	323	242	523	922	1,463	740	1,749
All other	4,495	7,708	9,798	11,005	12,509	8,209	13,837
Total	18,134	24,358	29,308	35,914	37,448	25,340	39,491
	Unit value (per pound)						
Canada	$0.63	$0.68	$0.67	$0.56	$0.70	$0.67	$1.02
Austral	1.00	0.94	0.93	1.12	1.00	0.90	2.07
U King	0.95	0.93	1.05	2.16	1.14	1.13	1.43
France	0.56	0.89	0.73	0.70	0.77	0.81	1.03
Italy	0.90	1.55	1.47	1.49	0.47	0.42	1.17
Nethlds	0.90	0.45	0.92	0.96	0.89	0.87	0.94
FR Germ	0.56	0.57	0.59	1.26	1.01	1.07	0.91
Mexico	1.09	0.42	0.41	0.39	0.75	0.79	0.92
All other	0.82	0.54	0.57	0.92	0.74	0.77	0.98
Average	0.63	0.62	0.65	0.76	0.75	0.75	1.08

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 19.--Polypropylene flexible film, strips, and sheets: U.S. exports of domestic merchadise, by principal markets, 1975-79 and January-August 1979 and January-August 1980

Market	1975 1/	1976 1/	1977 1/	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
Canada				8,225	11,806	6,955	8,577
Belgium				685	3,199	1,558	6,587
U King				516	2,265	1,140	1,169
Rep Saf				262	826	539	1,107
Mexico				352	938	634	4,864
Japan				35	575	236	891
France				290	709	396	223
Austral				638	581	382	809
Thailnd				2	734	734	999
Brazil				219	531	187	480
All other				2,344	6,019	2,558	9,023
Total				13,569	28,182	15,318	34,729
	Value (1,000 dollars)						
Canada				7,475	12,140	7,374	7,492
Belgium				794	3,492	1,702	6,874
U King				565	1,645	1,057	630
Rep Saf				334	1,052	663	1,801
Mexico				410	843	488	2,330
Japan				116	771	407	653
France				330	769	474	398
Austral				768	753	452	1,155
Thailnd				1	661	661	1,248
Brazil				346	606	285	691
All other				2,821	4,616	1,925	7,876
Total				13,961	27,349	15,487	31,148
	Unit value (per pound)						
Canada				$0.91	$1.03	$1.06	$0.87
Belgium				1.16	1.09	1.09	1.04
U King				1.09	0.73	0.93	0.54
Rep Saf				1.27	1.27	1.23	1.63
Mexico				1.16	0.90	0.77	0.48
Japan				3.30	1.34	1.73	0.73
France				1.14	1.09	1.20	1.78
Austral				1.20	1.30	1.18	1.43
Thailnd				0.60	0.90	0.90	1.25
Brazil				1.58	1.14	1.52	1.44
All other				1.20	0.77	0.75	0.87
Average				1.03	0.97	1.01	0.90

1/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 20.--Polyvinyl chloride flexible film, strips, and sheets: U.S. exports of domestic merchandise, by principal markets, 1975-79 and January-August 1979 and January-August 1980

Market	1975	1976	1977	1978	1979	January-August 1979	January-August 1980
	Quantity (1,000 pounds)						
Canada	21,421	21,199	22,525	17,204	25,360	16,752	21,382
Belgium	4,795	7,372	8,012	9,657	12,607	7,279	8,373
Japan	946	2,771	4,274	4,292	4,690	2,743	4,096
FR Germ	1,954	3,067	2,004	2,924	3,344	1,725	1,960
Austral	669	2,199	1,427	2,161	2,161	1,368	1,296
U King	1,133	1,115	1,089	1,550	1,541	839	928
France	294	458	374	453	1,085	394	531
Mexico	1,014	1,226	3,290	1,332	1,619	1,095	1,303
All other	7,852	8,357	13,340	11,237	17,619	11,810	9,037
Total	40,078	47,765	56,335	50,809	70,026	44,005	48,905
	Value (1,000 dollars)						
Canada	15,818	21,326	21,647	22,279	25,845	17,842	20,712
Belgium	6,288	10,699	13,174	17,867	22,148	12,527	16,038
Japan	1,770	4,698	8,082	11,240	12,163	7,150	11,916
FR Germ	3,053	4,986	3,132	5,415	6,753	4,265	5,436
Austral	811	3,380	2,425	4,655	4,612	2,994	2,976
U King	1,089	1,638	1,751	3,619	4,544	2,728	3,559
France	450	931	605	1,847	3,963	2,252	3,767
Mexico	1,343	1,231	1,963	2,586	3,602	2,206	2,211
All other	8,503	10,662	15,856	17,268	27,942	17,838	18,077
Total	39,124	59,552	68,635	86,775	111,572	69,803	84,692
	Unit value (per pound)						
Canada	$0.74	$1.01	$0.96	$1.29	$1.02	$1.07	$0.97
Belgium	1.31	1.45	1.64	1.85	1.76	1.72	1.92
Japan	1.87	1.70	1.89	2.62	2.59	2.61	2.91
FR Germ	1.56	1.63	1.56	1.85	2.02	2.47	2.77
Austral	1.21	1.54	1.70	2.15	2.13	2.19	2.30
U King	0.96	1.47	1.61	2.34	2.95	3.25	3.83
France	1.53	2.03	1.62	4.08	3.65	5.71	7.09
Mexico	1.32	1.00	0.60	1.94	2.22	2.01	1.70
All other	1.08	1.28	1.19	1.54	1.59	1.51	2.00
Average	0.98	1.25	1.22	1.71	1.59	1.59	1.73

Source: Compiled from official statistics of the U.S. Department of Commerce.

SUMMARIES OF TRADE AND TARIFF INFORMATION

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COMPLETE LIST OF SUMMARIES PUBLISHED TO DATE IN SCHEDULE 7

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7-1-8	Handbags		
7-2-8	Electricity, Gas, and Liquid Supply and Production Meters		
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